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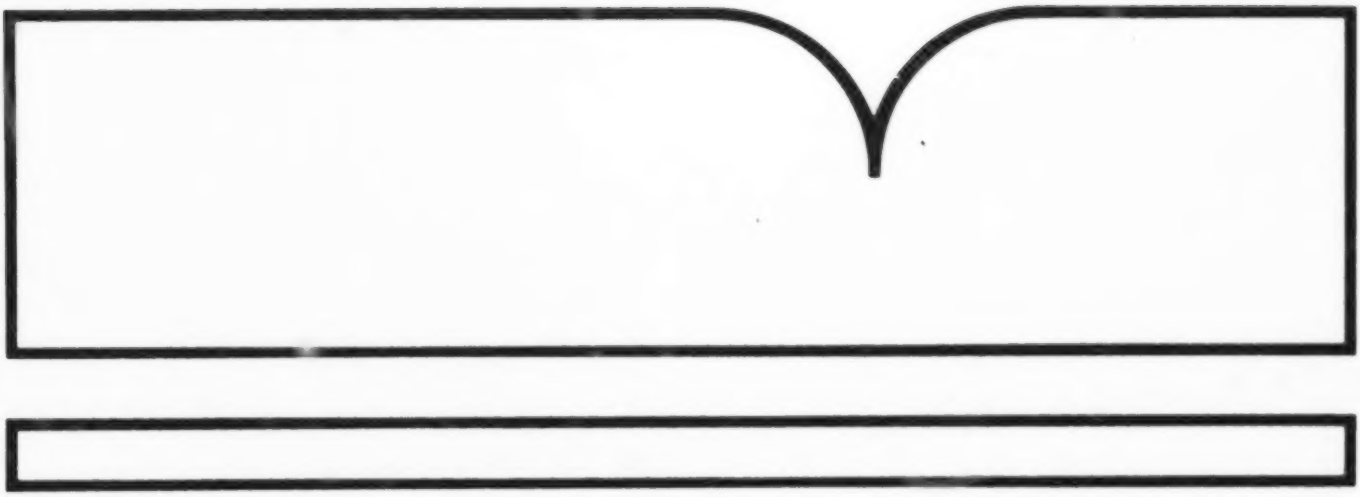

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INTRODUCTION

EPA is often regarded by the public as an invisible agency that only materializes in the event of catastrophic environmental spills. In truth, EPA, and the federal environmental laws it administers, are an unseen presence in almost every phase of Oregon life. EPA does not work alone. In nearly every major environmental program a close working relationship exists between EPA and its counterpart state agencies. EPA and its state partners monitor the air we breathe, the water we drink, the disposal of our sewage, and the by-products of industry that provide us with goods and jobs.

The reason for EPA's existence is clear: the American public wants clean water, air, and soil. Public opinion surveys reveal an impatience with the pace of cleanup, along with a willingness to pay "whatever it takes" to achieve a clean environment.

The most comprehensive environmental laws are the product of federal action, such as the Clean Water Act and Superfund. Most of the federal environmental statutes have state counterparts, many of them predating the federal acts. In fact, Oregon has been in the forefront of many environmental initiatives which later were embodied in federal law. Our national experience with environmental regulation has consistently emphasized the key responsibility of the states. States have assumed a lead role in many of the environmental monitoring, inspection, reporting, permitting and enforcement functions. The federal government retains oversight responsibility for these activities and provides substantial grant funding and technical assistance. At present, Oregon agencies, particularly the Department of Environmental Quality (DEQ), have assumed direct responsibility for approximately 75% of the federal programs. A listing of grant funding provided by EPA to support state environmental programs is included at the end of this report.

Delegation has certain clear implications for Oregon. Staffs and budgets may have to grow. Cooperation, communication, and trust between EPA and state counterpart agencies become critical to ensure that the ultimate goals of all environmental programs - better health and a better place to live - are kept in view. The citizens of Oregon justifiably pride themselves on the environmental richness of their state. The high professional standards and dedication of state employees, along with an effective state-federal partnership, have contributed much to an improved natural environment.

This report will introduce pertinent environmental programs and then highlight the most pressing issues. This document should not be considered the definitive reference for federal and state environmental laws and programs in Oregon. For further information the following senior EPA personnel should be consulted:

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AIR PROGRAM

The air programs are designed to protect and improve air quality in Oregon. EPA sets national ambient air quality standards for major pollutants and each state develops a State Implementation Plan (SIP) to achieve and maintain the standards. The Oregon SIP includes regulations on major industrial emissions, inspection/maintenance programs for motor vehicles in Portland and Medford, smoke management plans for field and slash burning, and rules pertaining to domestic wood stoves. The Oregon SIP has been successful in promoting good air quality in the state, but some of the major cities (Portland, Eugene, Salem, Medford, and Grants Pass) still exceed ambient standards for one or more pollutants. The existing SIP is expected to remedy these problems except for Medford and possibly Portland. The situations in those cities and other principal air quality issues are discussed below.

Medford Air Shed

The Medford area is located in a valley ringed with mountains. The emissions from industry, motor vehicles, and wood stoves, abetted by poor air dispersion, result in some of the worst air quality in the nation for carbon monoxide and suspended particulates. The air quality standard for total suspended particulates (TSP) was violated 39 times in 1985 in Medford. Woodstove emissions account for 27% of the emissions and have become the main target of remedial efforts.

Over the years, carbon monoxide levels have frequently exceeded the air quality standards. To solve this problem, DEQ recently implemented a vehicle inspection and maintenance program similar to the program in Portland. The Medford program is projected to provide sufficient additional reduction in tailpipe emissions to attain standards within a few years. The program will also further reduce ozone levels, which are already meeting the air quality standards.

Strategies to attain the standards for suspended particulates originally focused on industrial emissions and certain less important sources. In the last several years wood stoves have been identified as a major additional source. It seems clear that reductions in current stove emissions are needed to attain standards. DEQ's current program, among the most progressive in the nation, requires new wood stoves to meet tight emission standards. However, it will take years for the cleaner new stoves to replace existing unimproved models.

In an effort to control existing wood stoves, the City of Medford passed an ordinance providing for mandatory curtailment of wood stove use during pollution episodes and for mandatory weatherization of homes before sale. However, the mandatory curtailment program has been replaced with a voluntary program and mandatory weatherization has been repealed. DEQ is now exploring two additional approaches. First, the Department is working with the local electric utility to establish lower rates for home owners with wood stoves. A pilot program of this type has been initiated in California. Secondly, DEQ has proposed the replacement of existing wood stoves in Medford with clean burning models. Funding would be provided by

money available to the state from the settlement of federal price-fixing lawsuits against certain oil companies. This proposal, along with other proposals from various agencies, has been reviewed by the Oregon Department of Energy and has been referred to the Governor's Office.

Portland Ozone

Ozone is a result of sunlight interacting with hydrocarbons and nitrogen oxides in the air. The hydrocarbons are mostly byproducts of incomplete automobile engine combustion. Gasoline has also become more volatile, releasing more hydrocarbons, as a result of lead-substitute octane additives. The Portland metropolitan area exceeds the ozone standard about once a year. An average of one exceedance (violation of the standard) per year is allowed under the law. During the unusually hot summer of 1986, however, three exceedances occurred, causing some concern about the adequacy of current control strategies. Data for Portland do not give assurance that attainment of the ozone standard will be achieved by the statutory deadline (December 31, 1987). This has raised some important questions:

1. Have unusually hot summers (the prime condition for ozone production) merely been a temporary obstacle?

2. Have other sources (slash and field burning, unregulated point sources) contributed to the problem?

3. Will the world-wide greenhouse effect and resulting increased temperatures make ozone accumulation even more common in the future?

DEQ is projecting attainment of the ozone standard by the end of 1987, the deadline established by federal law. If exceedances continue, additional controls may be needed. The most likely candidates are reduction in gasoline volatility through process changes at the refineries, and additional gasoline vapor controls either at service stations or through vehicle modifications.

Slash and Field Burning

When a forest is logged a large amount of natural debris (slash) is left behind. It is not considered economical to remove the slash so it is burned to make room for the new growth. Slash burns generate high smoke plumes that travel great distances. The Oregon Department of Forestry implements a smoke management plan designed to minimize smoke intrusions into populated areas, but less populated areas frequently experience heavy intrusions.

After grass seed is harvested in the Willamette Valley and elsewhere, the stubble is burned in the fields to destroy disease organisms and to prepare for replanting. DEQ manages the burning operations and is effective in steering the smoke away from large cities but, again, less populated areas frequently suffer.

Ai- monitoring by DEQ shows that slash and field burning do not cause exceedances of the air quality standards. Nonetheless, this burning causes a major nuisance for those living in the path of the plumes. Recently there has been concern about herbicides used on slash to dry the material before burning, so-called "brown and burn". DEQ has begun to investigate whether this practice creates toxic combustion products that constitute a health problem.

Grass seed growers are charged a fee to burn their fields. The money is used to finance DEQ's smoke management operation and to research field burning alternatives. The research is directed at developing alternative crops, less severe burning techniques, other means of sanitizing fields, and commercial uses for the grass stubble. While progress is being made, it will take years to produce an appreciable effect.

The 1985 Oregon Legislature directed DEQ to conduct a study into the health effects of field burning. This study is underway and is projected for completion in early 1987.

New Particulate Standard (PM_{10})

The current air quality standards for suspended particulates include a large range of particle sizes but do not emphasize the small particles which most easily penetrate deep within the lungs. Accordingly, EPA has proposed revisions to the standards to focus on particulate matter 10 microns and less in diameter, hence the designation PM_{10}. Promulgation of the standards is anticipated in 1987.

Depending on the level at which the final standard is set there may be several cities where the standard is exceeded. This will require additions to the SIP to provide attainment strategies for the problem cities. The strategies could require tighter control of industrial sources and reduction in wood stove use. Also, if field or slash burning causes exceedances of the PM_{10} standard, changes in those operations may be necessary.

The lesson we are learning is that a few belching smoke stacks are not the source of our air problems. Climate, geography, lifestyles, and a variety of livelihoods all contribute to adverse air quality. As citizen demands for clean air increase and as science expands its knowledge of pollutant sources and effects, government must accelerate its efforts to keep pace.

HAZARDOUS WASTE

Superfund

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is the federal law governing cleanup of locations where hazardous wastes have been improperly dumped or released. The law provides for recovery of cleanup costs from responsible parties. It also imposes a tax on industrial waste generators. This revenue (the so-called "Superfund") may then be applied to cleanup costs.

The cleanup process involves identification and listing of potentially eligible sites. These sites are then scored by means of a formula that evaluates the relative danger of the toxic wastes to human health and the environment. Sites with scores exceeding an established threshold are then placed on the National Priority List (NPL) as eligible for federal cleanup.

Oregon currently has five sites on the NPL:

- Martin Marietta (The Dalles)
- United Chrome (Corvallis)
- Gould (Northwest Portland)
- Teledyne Wah Chang (Millersburg)
- Umatilla Army Depot

Federal law requires states to provide 10% matching funds for cleanups financed by Superfund. United Chrome is the only NPL site in Oregon currently expected to require Superfund financing. Revenue for this matching fund is generated by a 1985 state law that imposes a $10 per ton "tipping" or disposal fee at the Arlington Hazardous Waste Facility. As other sites are added to the NPL, revenue needs for state matching funds will increase.

The 1985 Oregon Legislature also provided additional support for a viable state program. Staff has been authorized and hired and an EPA employee has been detailed to the state as a program manager. Dedication of these resources to hazardous waste cleanup has already resulted in a Memorandum of Understanding between Oregon and EPA that schedules the assumption of some Superfund responsibilities by the state.

The development of experience and technical expertise within the state's staff has become even more critical after passage of the Superfund reauthorization of 1986. Federal law now favors permanent, on-site Superfund solutions to replace the practice of hauling waste from one location to another. Permanency therefore will require more sophisticated, more expensive treatments. The state, in order to effectively fulfill its role in approving Superfund feasibility plans, must be prepared with knowledgeable staff and a dependable funding source.

Oregon's preparation for an increased Superfund role will be further stimulated by the number of potential sites. As of October 31, 1986, CERCLIS, the inventory of potential hazardous waste sites, listed 202 locations in Oregon, including those on the NPL. This number will likely increase by 75-100 during the coming year. Even if the sites do not qualify for the NPL and Superfund financing, some degree of remedial cleanup will probably be needed.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) is designed to avoid creation of future Superfund sites by regulating wastes from creation to disposal ("cradle to grave"). The program licenses treatment, storage, and disposal sites to accept hazardous wastes only if the operators can demonstrate that they have adequate technology, appropriate management practices, and sufficient financial resources to minimize the chance that they will become environmental hazards.

In 1984 Congress passed the Hazardous and Solid Waste Amendments (HSWA) to RCRA. The scope of the program was expanded immensely to cover hundreds of small quantity generators previously exempted. The new law also mandated the phaseout of land disposal of hazardous waste, added new requirements for double liner and leachate collection systems for surface impoundments, and placed new controls on the burning and blending of used oil and hazardous waste fuels.

The State of Oregon has made remarkable progress in building its hazardous waste program during the past three years. DEQ has been granted delegation of the original RCRA program effective January, 1986. However, EPA will continue to administer the 1984 HSWA requirements in Oregon until the state qualifies for further program delegation. Qualification will require legislative and budget authority in order to provide the legal and resource foundation for a successful program. Additional technical capability, particularly in groundwater monitoring, will be necessary to effectively regulate prior releases and prescribe corrective action, as provided by HSWA. HSWA is among the most complicated programs ever established by Congress; the transition to a fully delegated state program will require careful attention by both state and federal administrators.

WATER PROGRAMS

Major federal efforts to regulate water pollution began in the 1960's. Real momentum was gained in 1972 with the passage of the Clean Water Act and in 1974 through the Safe Drinking Water Act. Water pollution control in Oregon, however, long antedated federal programs. As early as 1938 the State Sanitary Authority was formed to clean up the Willamette River.

Historically, federal and state programs have been primarily concerned with surface waters (rivers, lakes and streams) and controlling "point source" pollution. Thus, municipal sewage treatment plants are regulated and sophisticated treatment is required. Large industrial sources, such as pulp mills or aluminum plants, must operate under a National Pollution Discharge Elimination System (NPDES) permit that limits pollutants and may require pretreatment of wastes to reduce their toxicity. In the drinking water program, community water systems must monitor their sources for certain contaminants, provide for laboratory testing, and report water quality to the state on a frequent -- sometimes daily -- basis. A variety of remedial and enforcement measures are available in the event of non-compliance.

Substantial progress has been made in regulating municipal and industrial pollution sources. Meanwhile, a thornier problem has become evident in the form of non-point source pollution. Septic tanks, livestock waste, runoff from agricultural lands, and urban runoff are among the many contributors to non-point source pollution. Sources are difficult to identify and government agencies have had limited success in developing control strategies. Issues of local land use and fundamental lifestyle patterns are among the obstacles to minimizing non-point source pollution. Cooperative community efforts have achieved some control of non-point sources -- the successful program to control animal waste at dairy farms around Tillamook Bay is a noteworthy example. A recent survey of Oregon's lakes and streams suggested that over 50% of the surface waterways were severely or moderately impaired by non-point source pollution, and over 20% of the state's smaller lakes (under 5,000 acres) were moderately impaired by non-point sources.

Non-point sources, groundwater contamination, and the increasing burdens of urban development will continue to pose problems for the foreseeable future.

Sensitive Rivers

Under the Clean Water Act, the state has primary responsibility for designating the beneficial uses of its waterways (e.g., recreation, fish spawning) and then establishing water quality criteria designed to protect those beneficial uses. States are also expected to set limits for allowable pollutant loadings in rivers and streams that are particularly sensitive to pollution impacts. A pollutant load exceeding these limits may threaten the stream's ability to support beneficial uses.

Portions of certain river basins, including the Tualatin River, South Umpqua River, Bear Creek, and others, violate water quality standards at certain times of the year. The reasons for the violations vary and often are not fully understood, but may include inadequate sewage treatment capacity, non-point source pollution (animal waste, runoff from agricultural lands and increased urbanization), and even reduced stream flow from naturally occurring conditions.

DEQ, with EPA support, has embarked on an initiative to improve water quality in these rivers. Each river must be studied to design a remedy tailored to local conditions. The potential solutions are river-specific and could include more stringent municipal and industrial discharge limits, non-point source controls, or other measures. So far, efforts have focused on defining the most seriously polluted rivers in Oregon. The severity of water quality problems is being estimated and causes of pollution are being identified. The current studies on the Tualatin River will help to develop approaches for solving these complex water quality problems throughout Oregon. The systematic river by river approach is being challenged in a lawsuit which alleges that both EPA and the state have failed to establish adequate and timely pollutant limits for Oregon rivers.

Groundwater

The intensive pollution control programs of the past two decades focused almost exclusively on rivers and lakes, not groundwater. In recent years public health and environmental officials have grown increasingly concerned about contamination of our groundwater supplies. The value of this resource, particularly for agriculture and drinking water, is well known. Approximately one-half of the nation's population relies on groundwater as a drinking water source. Incidents of serious groundwater contamination have occurred in Oregon and every other state in the nation.

Groundwater faces contamination from a wide range of sources:

- Underground storage tanks, such as those at gasoline stations
- Agricultural run off and infiltration (pesticides, fertilizer)
- Septic tanks and cesspools
- Waste disposal activities (solid and hazardous)
- Salt water intrusion

The multiple sources of groundwater contamination complicate regulatory activities. The task becomes more complex due to the extraordinary difficulty of cleaning up a contaminated underground water-bearing layer (aquifer). In many cases damage is irreversible; cleanup, where possible, may take years and is often extremely expensive.

State and federal agencies have found groundwater contamination in several areas in Oregon. Aquifers in the Portland and Eugene areas, on the coast, in the Willamette Valley, and east of the Cascades are polluted from agricultural chemicals, septic tanks, and cesspools. Cleanup efforts are addressing cesspool contamination in East Multnomah County and septic tank contamination in the River Road/Santa Clara area of Eugene. These projects, while effective, are reminiscent of early efforts to control surface water pollution. They are site- and source-specific and do not reflect any comprehensive, systematic groundwater protection strategy.

Both organizationally and legally, groundwater regulatory efforts are complex. In Oregon, at least four state agencies have some involvement with groundwater. The legal authority and administrative concerns of each are different. This piecemeal approach is further complicated by the federal laws that create environmental programs. Both hazardous waste laws (RCRA and Superfund) are fundamentally groundwater protection statutes. In addition, the Safe Drinking Water Amendments of 1986 require state programs to protect drinking water wells. The Clean Water Act reauthorization which was recently vetoed also contained groundwater provisions. A similar bill is likely to be considered by the new Congress. Moreover, a proposed revision of the federal pesticides law will further crowd the groundwater arena.

In many ways groundwater pollution control is at about the same level of capability and sophistication that surface water pollution control efforts were 15 or 20 years ago. Staff technical capability is needed, monitoring networks must be set up, a full description of existing pollution problems must be assembled, and programs to prevent future problems set in place. DEQ is now working to develop a statewide groundwater protection strategy. EPA supports this effort since a close state-federal inter-agency working relationship is essential.

Drinking Water

The drinking water program established by the Safe Drinking Water Act (SDWA) has two parts. First, to insure high quality tap water, EPA sets water purity standards. Second, the water supplier must monitor the quality of the water delivered to the consumer and treat that water, if necessary, to assure that water quality standards are met. During the first 12 years of the Safe Drinking Water Act, EPA developed standards for 26 contaminants, including metals, turbidity (a measure of particles or cloudiness in the water), and bacteria. Responsibility for enforcing these standards originally resided with EPA. For the last year, however, the Oregon State Health Division, Department of Human Resources, has enforced these standards as part of its direct supervisory responsibility for the protection of public water supplies in the state.

Along with its assumption of these program duties, the Health Division must now face the challenge presented by amendments to the SDWA passed last June. Provisions of the new law require EPA to establish standards for 83 named contaminants by 1989, and 25 more by 1991. Two other provisions require the state to determine which systems will be required to add filtration of surface supplies and disinfection of all other drinking water supplies. These technology-based measures may require substantial capital investment for affected community water systems.

Determining which systems require mandatory treatment plus enforcing the new standards will be both difficult and expensive for the already strained resources of the Health Division. Moreover, local water systems will bear the added burden of monitoring and controlling all of these newly regulated contaminants. Small water systems, lacking the resources and expertise to meet federally mandated regulations, appear to pose the greatest challenge.

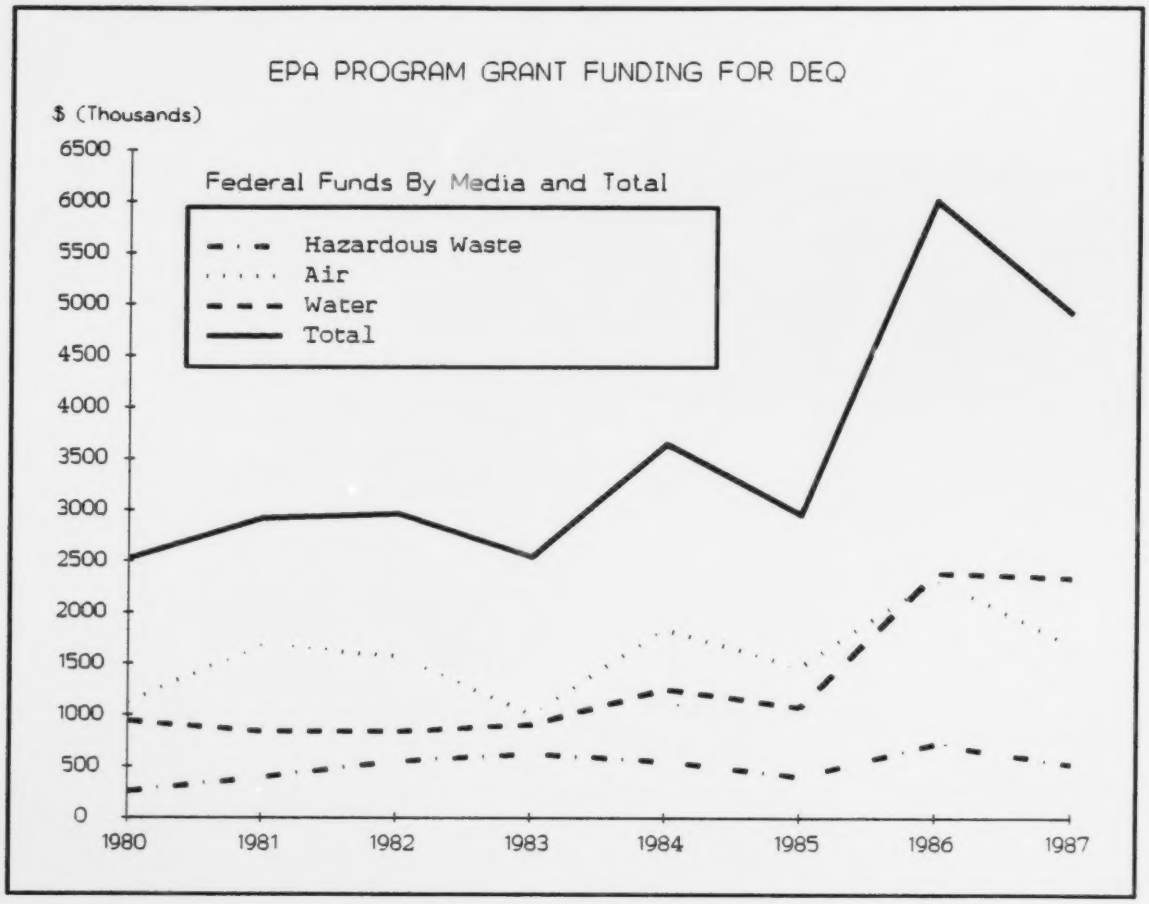
PESTICIDES

Although pesticides help produce greater yields and better quality agricultural products, they pose an enormous potential health risk to pesticide applicators and to the general public. State and federal regulatory efforts focus on identifying the health risks associated with specific chemicals and selectively banning or restricting pesticide use through labeling or other mechanisms. These efforts make sense, but the overall level of budget support is barely adequate considering the scope of chemical application and the potential for accidents and misuse. As we learn more about groundwater contamination, experts predict that leachable pesticides will take center stage as the principal pollutants of this vital source of drinking water.

The federal grant resources for pesticides regulation in Oregon are devoted mostly to training and certification of pesticides applicators. Little is left over for enforcement, which includes import inspections, labeling and container violations, as well as investigation of misapplication and misuse.

Pesticide regulation remains a major challenge for the state and EPA. A re-authorization of FIFRA (The Federal Insecticide, Fungicide, and Rodenticide Act) will soon begin its journey through Congress. The new bill carries the potential for a dramatic alteration of the regulatory structure for pesticides.

FEDERAL FUNDING



In addition to these program grants for DEQ, EPA has provided the following:

- Since 1980, EPA has contributed to the Oregon Department of Agriculture an average of $190,000 annually for pesticides enforcement and for the applicator training and certification program.

- Subsequent to the delegation of the drinking water program to the Oregon State Health Division in 1986, EPA's grant for the 1985-86 state biennium will be approximately $940,000. Funding at roughly this level is expected to continue under the amended SDWA.

- Since 1981, EPA has averaged $29,145,000 in annual grants to municipalities for the construction of sewage treatment facilities. A comparable sum is projected for FY 1987, assuming passage of the Clean Water Act reauthorization by the new Congress.